WEST Search History

Hide Items | Restore | Clear | Cancel

DATE: Tuesday, June 19, 2007

Hide?	Set Name	Query	Hit Count
		DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=NO; OP=OR	
☐	L33	L27 and l30	1
☐	L32	(l23 or l24 or L25) and l20	1
☐	L31	(l23 or l24 or L25) and l13	1
☐	L30	(l23 or l24 or L25) and l12	27
☐	L29	(l23 or l24 or L25) and l10	1
☐	L28	(l23 or l24 or L25) and l7	1
☐	L27	(l23 or l24 or L25) and l6	10
☐	L26	(l23 or l24 or L25) and l1	1
☐	L25	707/103r-103z.ccls.	2005
☐	L24	707/100.ccls.	5389
☐	L23	707/2-7.ccls.	14837
☐	L22	l20 and L21	1
☐	L21	((rank$ or relevanc$ or rat$) same categor$ same map$ same (object or objects))	72
☐	L20	l17 and L19	8
☐	L19	(graph same (object or objects) same category)	164
☐	L18	l1 and L17	1
☐	L17	(sort$ same (object or objects) same (search$ or quer$ or question$ or request$ or inquir$ or enquir$))	3644
☐	L16	l13 and l14	1
☐	L15	(path with graph with (node or node) with (edge or edges) same (graph adj1 travers$) with (proximity or distance or radius or size) with (relevan$ or rank$ or rat$))	0
☐	L14	(path same graph same (node or node) same (edge or edges) same (graph adj1 travers$) same (proximity or distance or radius or size) same (relevan$ or rank$ or rat$))	1
☐	L13	((delet$ or end$ or cancel$ or terminat$) near (graph adj1 travers$))	6
☐	L12	(graph adj1 traversal)	368
☐	L11	l6 and l10	1
☐	L10	((object or objects) with (search$ or inquir$ or enquir$ or quer$ or request$ or question$) with graph with categor$)	3
☐	L9	l6 and l7	1

10/790,642

☐	L8	l2 and L7	0
☐	L7	(path$ with graph with (node or node$) with (rank$ or relevanc$ or rat$))	18
☐	L6	(category near graph)	51
☐	L5	(graph same (quer$ or search$ or inquir$ or enquir$ or request$ or question$) same rank$ near categor$)	1
☐	L4	(graph near (quer$ or search$ or inquir$ or enquir$ or request$ or question$) near rank$ near categor$)	0
☐	L3	l1 and L2	0
☐	L2	(graph adj1 algorithm)	186
☐	L1	(Dijkastra adj1 graph)	1

END OF SEARCH HISTORY

? **ds**

Set	Items	Description
S1	101	GRAPH (W) TRAVERSAL
S2	14	S1 AND EDGE?
S3	7	S2 AND (QUER? OR SEARCH? OR REQUEST?)
S4	4	S3 AND (SORT? OR RELAVANC? OR RAT? OR RANK?)

? **t s4/full/1-4**

4/9/1

08280670 **E.I. No:** EIP99054670477

Title: Competitive algorithms for layered graph traversal

Author: Fiat, Amos; Foster, Dean P.; Karloff, Howard; Rabani, Yuval; Ravid, Yiftach ; Vishwanathan, Sundar
Corporate Source: Tel-Aviv Univ, Tel-Aviv, Isr

Source: SIAM Journal on Computing v 28 n 2 Jul-Aug 1998. p 447-462
Publication Year: 1998
CODEN: SMJCAT **ISSN:** 0097-5397
Language: English
Document Type: JA; (Journal Article) **Treatment:** T; (Theoretical)
Journal Announcement: 9907W1

Abstract: A layered graph is a connected graph whose vertices are partitioned into sets L//0 equals left brace s right brace , L//1, L//2, ..., and whose edges, which have nonnegative integral weights, run between consecutive layers. Its width is max left brace vertical bar L//i vertical bar right brace . In the on-line layered graph traversal problem, a searcher starts at s in a layered graph of unknown width and tries to reach a target vertex t; however, the vertices in layer i and the edges between layers i minus 1 and i are only revealed when the searcher reaches layer i minus 1. We give upper and lower bounds on the competitive ratio of layered graph traversal algorithms. We give a deterministic on-line algorithm which is O(9**w)-competitive on width-w graphs and prove that for no w can a deterministic on-line algorithm have a competitive ratio better than 2**w** minus **2 on width-w graphs. We prove that for all w, w/2 is a lower bound on the competitive ratio of any randomized on-line layered graph traversal algorithm. For traversing layered graphs consisting of w disjoint paths tied together at a common source, we give a randomized on-line algorithm with a competitive ratio of O(log w) and prove that this is optimal up to a constant factor. (Author abstract) 22 Refs.

Descriptors: *Graph theory; Computational complexity; Algorithms; Theorem proving; Random processes
Identifiers: Layered graph traversal algorithms; Competitive analysis
Classification Codes:
921.4 (Combinatorial Mathematics, Includes Graph Theory, Set Theory); 721.1 (Computer Theory, Includes Formal Logic, Automata Theory, Switching Theory, Programming Theory); 922.1 (Probability Theory)
921 (Applied Mathematics); 721 (Computer Circuits & Logic Elements); 922 (Statistical Methods)
92 (ENGINEERING MATHEMATICS); 72 (COMPUTERS & DATA PROCESSING)

10/790,642

Dialog eLink: open url
4/9/2
DIALOG(R)File 8: Ei Compendex(R)

06812846 **E.I. No:** EIP94031229379
Title: PCBN: A high-performance partitionable circular bus network for distributed systems

Author: Woo, Tai-Kuo; Su, Stanley Y.W.
Corporate Source: Univ of Florida, Gainesville, FL, USA
Source: IEEE Transactions on Parallel and Distributed Systems v 4 n 12 Dec 1993. p 1298-1307
Publication Year: 1993
CODEN: ITDSEO **ISSN:** 1045-9219
Language: English
Document Type: JA; (Journal Article) **Treatment:** T; (Theoretical)
Journal Announcement: 9404W4
Abstract: In a distributed computing environment, a high-performance communication network is essential. In this paper, we present a dynamically partitionable circular bus network (PCBN) and efficient algorithms for maximizing its utilization. In our approach, a distributed network is transformed into a graph, in which a vertex represents a communication request and an edge denotes the conflict between a pair of communication requests. A graph traversal algorithm is then applied to the graph to identify some maximal independent sets of vertices. The communication requests corresponding to the vertices of a maximal independent set can proceed in parallel. By computing the expected size of the maximal independent sets of a graph, we can obtain the improvement ratio of the network. In this paper, the network control and synchronization techniques of PCBN are described in detail. Another problem dealt with in this paper is the idling problem in the execution of nonconflicting requests. Since the requests may take different amounts of time to execute, the subnetworks of shorter durations will be idle after the completion of their requests if subnetworks are assigned to process them to their completion. This bus idling problem is solved by using a coin-changing algorithm. The performance evaluation shows a significant decrease in network delay. (Author abstract) 13 Refs.
Descriptors: *Distributed computer systems; Algorithms; Computer networks; Graph theory; Storage allocation (computer); Performance; Synchronization; Telecommunication control; Data communication systems
Identifiers: Partitionable circular bus network; Graph transversal algorithm; Coin changing algorithm; Graph coloring algorithms; Resource allocation algorithms; Bus idling problem
Classification Codes:
722.4 (Digital Computers & Systems); 723.1 (Computer Programming); 921.1 (Algebra); 722.3 (Data Communication, Equipment & Techniques); 921.4 (Combinatorial Mathematics, Includes Graph Theory, Set Theory)
722 (Computer Hardware); 723 (Computer Software); 921 (Applied Mathematics)
72 (COMPUTERS & DATA PROCESSING); 92 (ENGINEERING MATHEMATICS)

4/9/3
DIALOG(R)File 8: Ei Compendex(R)

06626827 **E.I. No:** EIP93030723787
Title: Performance modeling of a partitionable circular bus network for distributed systems

Author: Woo, Tai-Kuo
Corporate Source: Univ of Florida, Gainesville, FL, USA
Conference Title: Proceedings of the 1992 ACM/SIGAPP Symposium on Applied Computing SAC '92

Conference Location: Kansas City, KS, USA **Conference Date:** 19920301
E.I. Conference No.: 17957
Source: Applied Computing: Technological Challenges of the 1990's Proc 92 ACM SIGAPP Symp Appl Comput SAC 92 1992. Publ by ACM, New York, NY, USA. p 758-766
Publication Year: 1992
ISBN: 0-89791-502-x
Language: English
Document Type: CA; (Conference Article) **Treatment:** T; (Theoretical); A; (Applications)
Journal Announcement: 9306W4
Abstract: In a distributed computing environment, a high performance communication network is essential. In this paper, we present a dynamically partitionable circular bus network (PCBN) and an efficient algorithm for maximizing its utilization. In our approach, a distributed network is transformed into a graph, in which a vertex represents a communication request and an edge denotes the conflict between a pair of communication requests. A graph traversal algorithm is then applied to the graph to identify some maximal independent sets of vertices. The communication requests corresponding to the vertices of a maximal independent set can proceed in parallel. By computing the expected size of the maximal independent sets of a graph, we can obtain the improvement ratio of the network. The analytical performance evaluation shows a significant decrease in network delay. (Author abstract) 9 Refs.
Descriptors: *Distributed computer systems; Parallel processing systems; Computer systems; Computer networks; Performance; Algorithms; Graph theory; Combinatorial mathematics; Optimization; Computer hardware
Identifiers: Communication network; Partitionable circular bus network; Graph traversal algorithm
Classification Codes:
722.4 (Digital Computers & Systems); 721.1 (Computer Theory, Includes Formal Logic, Automata Theory, Switching Theory, Programming Theory); 921.4 (Combinatorial Mathematics, Includes Graph Theory, Set Theory); 921.5 (Optimization Techniques)
722 (Computer Hardware); 721 (Computer Circuits & Logic Elements); 921 (Applied Mathematics)
72 (COMPUTERS & DATA PROCESSING); 92 (ENGINEERING MATHEMATICS)

Dialog eLink: open url
4/9/4
DIALOG(R)File 8: Ei Compendex(R)

06513967 **E.I. Monthly No:** EIM9211-057845
Title: Competitive algorithms for layered graph traversal.

Author: Fiat, Amos; Foster, Dean P.; Karloff, Howard; Rabani, Yuval; Ravid, Yiftach ; Viswanathan, Sundar
Corporate Source: Comput Sci Dept, Tel-Aviv Univ, Israel
Conference Title: Proceedings of the 32nd Annual Symposium on Foundations of Computer Science
Conference Location: San Juan, PR, USA **Conference Date:** 19911001
Sponsor: IEEE Computer Soc

E.I. Conference No.: 17012
Source: Annual Symposium on Foundations of Computer Science (Proceedings). Publ by IEEE, Computer Society, Silver Spring, MD, USA (IEEE cat n 91CH3062-7). p 288-297
Publication Year: 1991
CODEN: ASFPDV **ISSN:** 0272-5428 **ISBN:** 0-8186-2445-0
Language: English
Document Type: PA; (Conference Paper) **Treatment:** T; (Theoretical)
Journal Announcement: 9211
Abstract: A layered graph is a connected, weighted graph whose vertices are partitioned into sets L//0 equals s[, L//1, L//2, ..., and whose edges run between consecutive layers. Its width is max vertical bar L//i vertical bar [. In the online layered graph traversal problem, a searcher starts at s in a layered graph of unknown width and tries to reach a target vertex t; however, the vertices in layer i and the edges between layers i - 1 and i are only revealed when the searcher reaches layer i-1. The authors give upper and lower bounds on the competitive ratio of layered graph traversal algorithms. They give a deterministic online algorithm that is O(9w)-competitive on width-w graphs and prove that for no w can a deterministic online algorithm have a competitive ratio better than 2w**-**2 on width-w graphs. They prove that for all w, w/2 is a lower bound on the competitive ratio of any randomized online layered graph traversal algorithm. For traversing layered graphs consisting of w disjoint paths tied together at a common source, they give a randomized online algorithm with a competitive ratio of O(log w) and prove that this is optimal up to a constant factor. 19 Refs.
Descriptors: *MATHEMATICAL TECHNIQUES--*Graph Theory; COMPUTER PROGRAMMING--Algorithms; PROBABILITY--Random Processes
Identifiers: GRAPH TRAVERSAL; LAYERED GRAPHS; ONLINE ALGORITHMS; RANDOMIZED ALGORITHMS
Classification Codes:
921 (Applied Mathematics); 723 (Computer Software); 922 (Statistical Methods)
92 (ENGINEERING MATHEMATICS); 72 (COMPUTERS & DATA PROCESSING)

? **ds**

Set	Items	Description
S1	101	GRAPH (W) TRAVERSAL
S2	14	S1 AND EDGE?
S3	7	S2 AND (QUER? OR SEARCH? OR REQUEST?)
S4	4	S3 AND (SORT? OR RELAVANC? OR RAT? OR RANK?)
S5	0	DIJKASTRA (W) GRAPH
S6	185	GRAPH (W) ALGORITHM
S7	49	S6 AND (EDGE? OR NODE? OR NODE?)
S8	8	S7 AND (SEARCH? OR QUER? OR INQUIR? OR ENQUIR? OR REQUEST? OR QUESTION?)
S9	0	S8 AND TRAVERSAL (W) GRAPH
S10	1	TRAVERSAL (W) GRAPH

? **t s8/full/1-8**

Dialog eLink: open url

8/9/1
DIALOG(R)File 8: Ei Compendex(R)

11168257 **E.I. No:** EIP06321004961
Title: Finding people frequently appearing in news

Author: Ozkan, Derya; Duygulu, Pinar
Corporate Source: Bilkent University Department of Computer Engineering, 06800, Ankara, Turkey
Conference Title: 5th International Conference on Image and Video Retrieval, CIVR 2006
Conference Location: Tempe, AZ, United States **Conference Date:** 20060713-20060715
E.I. Conference No.: 67930
Source: Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics) Image and Video Retrieval - 5th International Conference, CIVR 2006, Proceedings v 4071 LNCS 2006.
Publication Year: 2006
ISSN: 0302-9743 **eISSN:** 1611-3349
Language: English
Document Type: CA; (Conference Article) **Treatment:** T; (Theoretical)
Journal Announcement: 0608W2
Abstract: We propose a graph based method to improve the performance of person queries in large news video collections. The method benefits from the multi-modal structure of videos and integrates text and face information. Using the idea that a person appears more frequently when his/her name is mentioned, we first use the speech transcript text to limit our search space for a query name. Then, we construct a similarity graph with nodes corresponding to all of the faces in the search space, and the edges corresponding to similarity of the faces. With the assumption that the images of the query name will be more similar to each other than to other images, the problem is then transformed into finding the densest component in the graph corresponding to the images of the query name. The same graph algorithm is applied for detecting and removing the faces of the anchorpeople in an unsupervised way. The experiments are conducted on 229 news videos provided by NIST for TRECVID 2004. The results show that proposed method outperforms the text only based methods and provides cues for recognition of faces on the large scale. copy Springer-Verlag Berlin Heidelberg 2006. 16 Refs.
Descriptors: *Multimedia systems; Graph theory; Speech recognition; Image analysis; Face

recognition; Algorithms
Identifiers: News videos; Face information; Speech transcript text; Graph algorithm
Classification Codes:
723.5 (Computer Applications); 921.4 (Combinatorial Mathematics, Includes Graph Theory, Set Theory); 751.5 (Speech); 723.2 (Data Processing)
723 (Computer Software, Data Handling & Applications); 921 (Applied Mathematics); 751 (Acoustics, Noise & Sound); 716 (Electronic Equipment, Radar, Radio & Television)
72 (COMPUTERS & DATA PROCESSING); 92 (ENGINEERING MATHEMATICS); 75 (SOUND & ACOUSTICAL TECHNOLOGY); 71 (ELECTRONICS & COMMUNICATION ENGINEERING)

Dialog eLink: USPTO Full Text Retrieval Options
8/9/2
DIALOG(R)File 8: Ei Compendex(R)

10412940 **E.I. No:** EIP05219115104
Title: From distributed memory cycle detection to parallel LTL model checking

Author: Barnat, J.; Brim, L.; Chaloupka, J.
Corporate Source: Faculty of Informatics Masaryk University, Brno, Czech Republic
Conference Title: Proceedings of the Ninth International Workshop on Formal Methods for Industrial Critical Systems (FMICS 2004)
Conference Date: 20030625-20030627
E.I. Conference No.: 64683
Source: Electronic Notes in Theoretical Computer Science v 133 May 31 2005. p 21-39
Publication Year: 2005
ISSN: 1571-0661
Language: English
Document Type: CA; (Conference Article) **Treatment:** T; (Theoretical); X; (Experimental)
Journal Announcement: 0506W1
Abstract: In left bracket 2 right bracket we proposed a parallel graph algorithm for detecting cycles in very large directed graphs distributed over a network of workstations. The algorithm employs back-level edges as computed by the breadth first search. In this paper we describe how to turn the algorithm into an explicit state distributed memory LTL model checker by extending it with detection of accepting cycles, counterexample generation and partial order reduction. We discuss these extensions and show experimental results. copy 2005 Elsevier B.V. All rights reserved. 19 Refs.
Descriptors: *Distributed computer systems; Parallel algorithms; Storage allocation (computer); Automation; Computer science; Formal logic; Software engineering
Identifiers: LTL model checking; Breadth first search; Distributed memory; Parallel graph algorithms
Classification Codes:
722.4 (Digital Computers & Systems); 722.1 (Data Storage, Equipment & Techniques); 721.1 (Computer Theory (Includes Formal Logic, Automata Theory, Switching Theory & Programming Theory)); 723.1 (Computer Programming)
722 (Computer Hardware); 723 (Computer Software, Data Handling & Applications); 731 (Automatic Control Principles & Applications); 721 (Computer Circuits & Logic Elements)
72 (COMPUTERS & DATA PROCESSING); 73 (CONTROL ENGINEERING)

8/9/3

10242999 **E.I. No:** EIP05058813959
Title: An efficient distributed algorithm for ear decomposition

Author: Tsin, Yung H.
Corporate Source: School of Computer Science University of Windsor, Windsor, Ont. N9B 3P4, Canada
Conference Title: Proceedings of the International Conference on Modeling, Simulation and Visualization Methods, MSV'04 and Proceedings of the Int. Conference on Algorithmic Mathematics and Comput. Sci., AMCS'04
Conference Location: Las Vegas, NV, United States **Conference Date:** 20040621-20040624
Sponsor: Computer Science research, Education, and Appl. Press (CSREA); International Technology Institute (ITI); Korean Society for Internet Information (KSII); World Academy of Science for Information Technology (WAS)
E.I. Conference No.: 64217
Source: Proceedings of the International Conference on Modeling, Simulation and Visualization Methods, MSV'04 and Proceedings of the Int. Conference on Algorithmic Mathematics and Comput. Sci., AMCS'04 Proceedings of the International Conference on Modeling, Simulation and Visualization Methods, MSV'04 and Proceddings of the Int. Conference on Algorithmic Mathematics and Comput. Sci., AMCS'04 2004.
Publication Year: 2004
ISBN: 1932415343
Language: English
Document Type: CA; (Conference Article) **Treatment:** T; (Theoretical)
Journal Announcement: 0502W2
Abstract: an ear decomposition of a connected undirected graph is a partition of the link set of the graph into a collection of link-disjoint paths satisfying certain properties. In a recent paper of Kazmierczak and Radhakrishnan left bracket IEEE Transactions on Parallel and Distributed Systems 11 (1), 2000, 110-118. right bracket , a distributed algorithm for ear-decomposition is presented. While the authors claimed that the algorithm has O(m) time and message complexity (m is the number of links in the graph), it is shown in this paper that the actual time and message complexity of their algorithm are O (mn) (n is the number of nodes in the graph). An efficient distributed algorithm for ear decomposition is then presented. The algorithm requires only 2n-2 time units and 4m-n+1 messages. It also uses only two types of messages and runs on a weaker distributed computer model. 9 Refs.
Descriptors: *Algorithms; Graph theory; Telecommunication networks; Telecommunication links; Program processors; Trees (mathematics); Computational complexity; Mathematical models
Identifiers: Ear decomposition; Distributed algorithm; Graph algorithm; Depth-first search algorithm
Classification Codes:
921.4 (Combinatorial Mathematics, Includes Graph Theory, Set Theory); 723.1 (Computer Programming); 721.1 (Computer Theory (Includes Formal Logic, Automata Theory, Switching Theory & Programming Theory))
921 (Applied Mathematics); 716 (Electronic Equipment, Radar, Radio & Television); 723 (Computer Software, Data Handling & Applications); 721 (Computer Circuits & Logic Elements)
92 (ENGINEERING MATHEMATICS); 71 (ELECTRONICS & COMMUNICATION ENGINEERING); 72 (COMPUTERS & DATA PROCESSING)

8/9/4
DIALOG(R)File 8: Ei Compendex(R)

09452752 **E.I. No:** EIP03297550455
Title: Distributed visualization of graph algorithms

Author: Sherstov, Alexander A.
Corporate Source: Computer Science Department Hope College, Holland, MI 49423, United States
Conference Title: Proceedings of the 34th SIGCSE Technical Symposium on Computer Science Education
Conference Location: Reno,NV, United States **Conference Date:** 20030219-20030222
Sponsor: The Association for Computing Machinery Special Interest; on Computer Science Education
E.I. Conference No.: 61152
Source: SIGCSE Bulletin (Association for Computing Machinery, Special Interest Group on Computer Science Education) 2003. p 376-380
Publication Year: 2003
CODEN: SIGSD3 **ISSN:** 0097-8418
Language: English
Document Type: CA; (Conference Article) **Treatment:** G; (General Review)
Journal Announcement: 0307W4
Abstract: DisViz is a visualization tool designed to assist students in learning graph algorithms, an important topic in the undergraduate curriculum. DisViz is intended for collaborative use by a group of students over a classroom network. This visualization system views network hosts as graph nodes and the socket connections among them, as graph edges. In typical usage, every student runs a copy of DisViz on his/her local machine. These applications detect each other's presence on the network and coordinate their actions to execute the graph algorithm in question and to deliver identical animations to every terminal. 10 Refs.
Descriptors: *Computer aided instruction; Interactive computer graphics; Algorithms; Visualization; Computer aided software engineering; Students; Animation; Distributed computer systems; Computer supported cooperative work; Computer simulation; Computer science; Engineering education; Local area networks
Identifiers: Graph algorithms; Distributed visualization; Graph nodes
Classification Codes:
901.2 (Education); 723.5 (Computer Applications); 723.1 (Computer Programming); 722.4 (Digital Computers & Systems); 721.1 (Computer Theory (Includes Formal Logic, Automata Theory, Switching Theory & Programming Theory))
901 (Engineering Profession); 723 (Computer Software, Data Handling & Applications); 722 (Computer Hardware); 721 (Computer Circuits & Logic Elements)
90 (ENGINEERING, GENERAL); 72 (COMPUTERS & DATA PROCESSING)

Dialog eLink: open url
8/9/5
DIALOG(R)File 8: Ei Compendex(R)

08121613 **E.I. No:** EIP98094384982
Title: Distributed graph algorithm for the detection of local cycles and knots

Author: Boukerche, Azzedine; Tropper, Carl
Corporate Source: Univ of North Texas, Denton, TX, USA
Source: IEEE Transactions on Parallel and Distributed Systems v 9 n 8 Aug 1998. p 748-757
Publication Year: 1998
CODEN: ITDSEO **ISSN:** 1045-9219
Language: English
Document Type: JA; (Journal Article) **Treatment:** A; (Applications); T; (Theoretical)
Journal Announcement: 9811W3
Abstract: In this paper, a distributed cycle/knot detection algorithm for general graphs is presented. The algorithm distinguishes between cycles and knots and is the first algorithm to our knowledge which does so. It is especially relevant to an application such as parallel simulation in which 1) cycles and knots can arise frequently, 2) the size of the graph is very large, and 3) it is necessary to know if a given node is in a cycle or a knot. It requires less communication than previous algorithms - 2 m vs. (at least) (4m) for the Chandy and Misra algorithm, where m is the number of links in the graph. It requires O (nlog (n)) bits of memory, where n is the number of nodes. The algorithm differs from the classical diffusing computation methods through its use of incomplete search messages to speed up the computation. We introduce a marking scheme in order to identify strongly connected subcomponents of the graph which cannot reach the initiator of the algorithm. This allows us to distinguish between the case in which the initiator is in a cycle (only) or is in a knot. (Author abstract) 23 Refs.
Descriptors: *Distributed computer systems; Algorithms; Computer simulation; Telecommunication links; Communication channels (information theory); Computational methods; Data communication systems
Identifiers: Distributed graph algorithms; Distributed cycle/knot detection algorithms; Distributed simulations; Distributed deadlock detections
Classification Codes:
722.4 (Digital Computers & Systems); 723.5 (Computer Applications); 716.1 (Information & Communication Theory)
722 (Computer Hardware); 723 (Computer Software); 716 (Radar, Radio & TV Electronic Equipment); 921 (Applied Mathematics)
72 (COMPUTERS & DATA PROCESSING); 71 (ELECTRONICS & COMMUNICATIONS); 92 (ENGINEERING MATHEMATICS)

8/9/6
DIALOG(R)File 8: Ei Compendex(R)

07782096 **E.I. No:** EIP97083783915
Title: Dynamic trees as search trees via Euler tours, applied to the network simplex algorithm

Author: Tarjan, Robert E.
Corporate Source: Princeton Univ, Princeton, NJ, USA
Source: Mathematical Programming, Series B v 78 n 2 Aug 1 1997. p 169-177
Publication Year: 1997
CODEN: MPSBEU **ISSN:** 0025-5610
Language: English
Document Type: JA; (Journal Article) **Treatment:** T; (Theoretical)
Journal Announcement: 9710W1
Abstract: The dynamic tree is an abstract data type that allows the maintenance of a collection of trees

subject to joining by adding edges (linking) and splitting by deleting edges (cutting), while at the same time allowing reporting of certain combinations of vertex or edge values. For many applications of dynamic trees, values must be combined along paths. For other applications, values must be combined over entire trees. For the latter situation, an idea used originally in parallel graph algorithms, to represent trees by Euler tours, leads to a simple implementation with a time of O(log n) per tree operation, where n is the number of tree vertices. We apply this representation to the implementation of two versions of the network simplex algorithm, resulting in a time of 0(log n) per pivot, where n is the number of vertices in the problem network. (Author abstract) 26 Refs.
Descriptors: *Dynamic programming; Trees (mathematics); Parallel algorithms
Identifiers: Dynamic tress; Euler tours; Network simplex algorithm; Parallel graph algorithm
Classification Codes:
921.5 (Optimization Techniques); 921.4 (Combinatorial Mathematics, Includes Graph Theory, Set Theory)
921 (Applied Mathematics); 723 (Computer Software)
92 (ENGINEERING MATHEMATICS); 72 (COMPUTERS & DATA PROCESSING)

8/9/7
DIALOG(R)File 8: Ei Compendex(R)

07695173 **E.I. No:** EIP97053657216
Title: Word graph algorithm for large vocabulary continuous speech recognition

Author: Ortmanns, Stefan; Ney, Hermann; Aubert, Xavier
Corporate Source: Univ of Technology, Aachen, Ger
Source: Computer Speech & Language v 11 n 1 Jan 1997. p 43-72
Publication Year: 1997
CODEN: CSPLEO **ISSN:** 0885-2308
Language: English
Document Type: JA; (Journal Article) **Treatment:** A; (Applications); T; (Theoretical)
Journal Announcement: 9707W2
Abstract: This paper describes a method for the construction of a word graph (or lattice) for large vocabulary, continuous speech recognition. The advantage of a word graph is that a fairly good degree of decoupling between acoustic recognition at the 10-ms level and the final search at the word level using a complicated language model can be achieved. The word graph algorithm is obtained as an extension of the one-pass beam search strategy using word dependent copies of the word models or lexical trees. The method has been tested successfully on the 20 000-word NAB'94 task (American English, continuous speech, 20 000 words, speaker independent) and compared with the integrated method. The experiments show that the word graph density can be reduced to an average number of about 10 word hypotheses, i.e. word edges in the graph, per spoken word with virtually no loss in recognition performance. (Author abstract) Refs.
Descriptors: *Speech recognition; Pattern recognition systems; Speech analysis; Algorithmic languages; Trees (mathematics)
Identifiers: Word graph; Lexical trees
Classification Codes:
723.1.1 (Computer Programming Languages)
751.5 (Speech); 723.5 (Computer Applications); 751.1 (Acoustic Waves); 723.1 (Computer Programming); 921.4 (Combinatorial Mathematics, Includes Graph Theory, Set Theory)

751 (Acoustics); 723 (Computer Software); 716 (Radar, Radio & TV Electronic Equipment); 921 (Applied Mathematics)
75 (ACOUSTICAL TECHNOLOGY); 72 (COMPUTERS & DATA PROCESSING); 71 (ELECTRONICS & COMMUNICATIONS); 92 (ENGINEERING MATHEMATICS)

8/9/8
DIALOG(R)File 8: Ei Compendex(R)

07360540 **E.I. No:** EIP96033102867
Title: Separator based sparsification. I. Planarity testing and minimum spanning trees

Author: Eppstein, David; Galil, Zvi; Italiano, Giuseppe F.; Spencer, Thomas H.
Corporate Source: Univ of California, Irvine, CA, USA
Source: Journal of Computer and System Sciences v 52 n 1 Feb 1996. p 3-27
Publication Year: 1996
CODEN: JCSSBM **ISSN:** 0022-0000
Language: English
Document Type: JA; (Journal Article) **Treatment:** T; (Theoretical)
Journal Announcement: 9605W2
Abstract: We describe algorithms and data structures for maintaining a dynamic planar graph subject to edge insertions and edge deletions that preserve planarity but that can change the embedding. We give a fully dynamic planarity testing algorithm that maintains a graph subject to edge insertions and deletions and that allows queries that test whether the graph is currently planar, or whether a potential new edge would violate planarity, in O(n** one half) amortized time per update or query. We give fully dynamic algorithms for maintaining the connected components, the best swap and the minimum spanning forest of a planar graph in O(log n) worst-case time per insertion and O(log**2 n) per deletion. Finally, we give fully dynamic algorithms for maintaining the 2-edge-connected components of a planar graph in O (log n) amortized time per insertion and O(log**2 n) per deletion. All of the data structures, except for the one that answers planarity queries, handle only insertions that keep the graph planar. All our algorithms improve previous bounds. The improvements are based upon a new type of sparsification combined with several properties of separators in planar graphs. (Author abstract) 18 Refs.
Descriptors: *Data structures; Algorithms; Graph theory; Query languages; Computation theory
Identifiers: Sparsification; Planarity testing; Minimum spanning trees; Dynamic graph algorithm; Edge insertions; Edge deletions
Classification Codes:
723.1.1 (Computer Programming Languages)
723.2 (Data Processing); 921.4 (Combinatorial Mathematics, Includes Graph Theory, Set Theory); 723.1 (Computer Programming); 721.1 (Computer Theory, Includes Formal Logic, Automata Theory, Switching Theory, Programming Theory)
723 (Computer Software); 921 (Applied Mathematics); 721 (Computer Circuits & Logic Elements)
72 (COMPUTERS & DATA PROCESSING); 92 (ENGINEERING MATHEMATICS)

? t s10/full/1

10/9/1

06372874 **E.I. Monthly No:** EI9202021657
Title: On the time to traverse all edges of a graph.

Author: Zuckerman, David
Corporate Source: Univ of California, Berkeley, CA, USA
Source: Information Processing Letters v 38 n 6 Jun 28 1991 p 335-337
Publication Year: 1991
CODEN: IFPLAT **ISSN:** 0020-0190
Language: English
Document Type: JA; (Journal Article) **Treatment:** T; (Theoretical)
Journal Announcement: 9202
Abstract: The expected time for a random walk on an undirected graph G=(V, E) to visit all the vertices is O(vertical bar V vertical bar vertical bar EVBAR), and is O(vertical bar V vertical bar **2) for regular graphs. Here we show that both bounds hold even if we are required to traverse all the edges, although our bounds for regular graphs requires that the degree be vertical bar V vertical bar ** delta for some delta less than l. (Author abstract) 8 Refs.
Descriptors: *MATHEMATICAL TECHNIQUES--*Graph Theory; MATHEMATICAL TECHNIQUES-- Combinatorial Mathematics; PROBABILITY--Random Processes
Identifiers: GRAPH TRAVERSAL; GRAPH ALGORITHMS; RANDOM WALK; COVER TIME
Classification Codes:
921 (Applied Mathematics); 922 (Statistical Methods)
92 (ENGINEERING MATHEMATICS)

? **ds**

```
Set     Items   Description
S1          0   DIKASTRA GRAPH
S2          0   DIJKASTRA (W) GRAPH
S3        283   GRAPH (W) ALGORITHM
S4         84   S3 AND (OBJECT? OR NODE? OR EDGE?)
S5         14   S4 AND (QUER? OR SEARCH? OR REQUEST?)
S6          0   S5 AND TRAVERSAL?
S7          0   S5 AND (RANK? OR RAT? OR RELEVANC?)
```

? **t s5/medium/1-14**

5/3/1
DIALOG(R)File 2: INSPEC

10246040
Title: Design pattern detection using similarity scoring
Author Tsantalis, N.; Chatzigeorgiou, A.; Stephanides, G.; Halkidis, S.T.
Author Affiliation: Dept. of Appl. Informatics, Univ. of Macedonia, Thessaloniki, Greece
Journal: IEEE Transactions on Software Engineering vol.32, no.11 p. 896-909
Publisher: IEEE ,
Publication Date: Nov. 2006 **Country of Publication:** USA
CODEN: IESEDJ **ISSN:** 0098-5589
SICI: 0098-5589(200611)32:11L.896:DPDU;1-J
Material Identity Number: I271-2007-001
U.S. Copyright Clearance Center Code: 0098-5589/2006/$20.00
Language: English
Subfile: C

5/3/2
DIALOG(R)File 2: INSPEC

10215061
Title: Compression-based fixed-parameter algorithms for feedback vertex set and edge bipartization
Author Jiong Guo; Gramm, J.; Huffner, F.; Niedermeier, R.; Wernicke, S.
Author Affiliation: Inst. fur Informatik, Friedrich-Schiller-Univ. Jena, Germany
Journal: Journal of Computer and System Sciences vol.72, no.8 p. 1386-96
Publisher: Academic Press ,
Publication Date: Dec. 2006 **Country of Publication:** USA
CODEN: JCSSBM **ISSN:** 0022-0000
SICI: 0022-0000(200612)72:8L.1386:CBFP;1-3
Material Identity Number: J066-2006-007

Language: English
Subfile: C

5/3/3
DIALOG(R)File 2: INSPEC

10122157
Title: Minimum energy path planning for ad hoc networks
Author Chen, D.; Lin, P.J.
Author Affiliation: Massachusetts Inst. of Technol., Cambridge, MA, USA
Conference Title: 2006 IEEE Wireless Communications and Networking Conference (IEEE Cat. No. 06TH8876) p. 288-93
Publisher: IEEE , Piscataway, NJ, USA
Publication Date: 2006 **Country of Publication:** USA CD-ROM pp.
ISBN: 1 4244 0269 7 **Material Identity Number:** XX-2006-01309
U.S. Copyright Clearance Center Code: 1 4244 0269 7/2006/$20.00
Conference Title: 2006 IEEE Wireless Communications and Networking Conference
Conference Date: 3-6 April 2006 **Conference Location:** Las Vegas, NV, USA
Language: English
Subfile: B

5/3/4
DIALOG(R)File 2: INSPEC

10027099
Title: Finding people frequently appearing in news
Author Ozkan, D.; Duygulu, P.
Author Affiliation: Dept. of Comput. Eng., Bilkent Univ., Ankara, Turkey
Conference Title: Image and Video Retrieval. 5th International Conference, CIVR 2006. Proceedings (Lecture Notes in Computer Science Vol.4071) p. 173-82
Editor(s): Sundaram, H.; Naphade, M.; Smith, J.R.
Publisher: Springer-Verlag , Berlin, Germany
Publication Date: 2006 **Country of Publication:** Germany xii+547 pp.
ISBN: 3 540 36018 2 **Material Identity Number:** XX-2006-00953
Conference Title: Image and Video Retrieval. 5th International Conference, CIVR 2006. Proceedings
Conference Date: 13-15 July 2006 **Conference Location:** Tempe, AZ, USA
Language: English
Subfile: C

Dialog eLink: USPTO Full Text Retrieval Options
5/3/5
DIALOG(R)File 2: INSPEC

09736491
Title: Efficient optimal surface detection: theory, implementation, and experimental validation
Author Kang Li; Xiaodong Wu; Chen, D.Z.; Sonka, M.
Author Affiliation: Dept. of Electr. & Comput. Eng., Iowa Univ., Iowa City, IA, USA
Journal: Proceedings of the SPIE - The International Society for Optical Engineering **Conference Title:** Proc. SPIE - Int. Soc. Opt. Eng. (USA) vol.5370, no.1 p. 620-7
Publisher: SPIE-Int. Soc. Opt. Eng ,
Publication Date: 2004 **Country of Publication:** USA
CODEN: PSISDG **ISSN:** 0277-786X
SICI: 0277-786X(2004)5370:1L.620:EOSD;1-8
Material Identity Number: C574-2005-048
U.S. Copyright Clearance Center Code: 0277-786X/04/$15.00
Conference Title: Medical Imaging 2004. Image Processing
Conference Date: 16-19 Feb. 2004 **Conference Location:** San Diego, CA, USA
Language: English
Subfile: A B C

Dialog eLink: USPTO Full Text Retrieval Options
5/3/6
DIALOG(R)File 2: INSPEC

09719286
Title: The bottleneck k-MST
Author Punnen, A.P.; Chapovska, O.
Author Affiliation: Dept. of Math., Simon Fraser Univ., Surrey, BC, Canada
Journal: Information Processing Letters vol.95, no.5 p. 512-17
Publisher: Elsevier ,
Publication Date: 15 Sept. 2005 **Country of Publication:** Netherlands
CODEN: IFPLAT **ISSN:** 0020-0190
SICI: 0020-0190(20050915)95:5L.512:B;1-3
Material Identity Number: I206-2005-014
Language: English
Subfile: C

Dialog eLink: USPTO Full Text Retrieval Options
5/3/7
DIALOG(R)File 2: INSPEC

09692711
Title: Identify the centerline of tubular structure in medical images
Author Yu-Tai Ching; Yeh, C.
Author Affiliation: Dept. of Comput. & Inf. Sci., Nat. Chiao Tung Univ., HsunChu, Taiwan

Journal: Proceedings of the SPIE - The International Society for Optical Engineering **Conference**
Title: Proc. SPIE - Int. Soc. Opt. Eng. (USA) vol.5747, no.1 p. 2002-11
Publisher: SPIE-Int. Soc. Opt. Eng ,
Publication Date: 2005 **Country of Publication:** USA
CODEN: PSISDG **ISSN:** 0277-786X
SICI: 0277-786X(2005)5747:1L.2002:ICTS;1-K
Material Identity Number: C574-2005-214
U.S. Copyright Clearance Center Code: 0277-786X/2005/$15.00
Conference Title: Medical Imaging 2005: Image Processing
Conference Date: 17 Feb. 2005 **Conference Location:** San Diego, CA, USA
Language: English
Subfile: A B

Dialog eLink: USPTO Full Text Retrieval Options
5/3/8
DIALOG(R)File 2: INSPEC

09448429 **INSPEC Abstract Number:** C2005-07-1160-142
Title: Automated generation of search tree algorithms for hard graph modification problems
Author Gramm, J.; Guo, J.; Huffner, F.; Niedermeier, R.
Author Affiliation: Wilhelm-Schickard-Inst. fur Inf., Tubingen Univ., Germany
Journal: Algorithmica vol.39, no.4 p. 321-47
Publisher: Springer-Verlag ,
Publication Date: Aug. 2004 **Country of Publication:** USA
CODEN: ALGOEJ **ISSN:** 0178-4617
SICI: 0178-4617(200408)39:4L.321:AGST;1-R
Material Identity Number: E327-2004-008
Language: English
Subfile: C

Dialog eLink: USPTO Full Text Retrieval Options
5/3/9
DIALOG(R)File 2: INSPEC

09374750 **INSPEC Abstract Number:** C2005-06-6180N-001
Title: An approach to automatic generation of multi-lingual synonymous terms dictionary using Japanese-English bilingual author's keywords
Author Aizawa, A.
Author Affiliation: Res. Center for Inf. Resources, National Inst. of Informatics, Tokyo, Japan
Journal: Journal of Information Processing and Management vol.47, no.6 p. 401-9
Publisher: Japan Science and Technology Corp ,
Publication Date: Sept. 2004 **Country of Publication:** Japan
CODEN: JOKAAB **ISSN:** 0021-7298
SICI: 0021-7298(200409)47:6L.401:AAGM;1-V

Material Identity Number: G321-2004-011
Language: Japanese
Subfile: C

5/3/10
DIALOG(R)File 2: INSPEC

08946319 **INSPEC Abstract Number:** B2004-06-6135-081, C2004-06-1250M-032
Title: A new median graph algorithm
Author Hlaoui, A.; Wang, S.
Author Affiliation: DMI, Sherbrooke Univ., Que., Canada
Conference Title: Graph Based Representations in Pattern Recognition. 4th IAPR International Workshop, GbRPR 2003. Proceedings (Lecture Notes in Comput. Sci. Vol.2726) p. 225-34
Editor(s): Hancock, E.; Vento, M.
Publisher: Springer-Verlag , Berlin, Germany
Publication Date: 2003 **Country of Publication:** Germany viii+270 pp.
Material Identity Number: XX-2003-02283
Conference Title: Graph Based Representations in Pattern Recognition. 4th IAPR International Workshop, GbRPR 2003. Proceedings
Conference Date: 30 June-2 July 2003 **Conference Location:** York, UK
Language: English
Subfile: B C

5/3/11
DIALOG(R)File 2: INSPEC

08584102 **INSPEC Abstract Number:** B2003-05-7990-020
Title: Stochastic search and graph techniques for MCM path planning
Author Piatko, C.D.; Diehl, C.P.; McNamee, P.; Resch, C.L.; I-Jeng Wang
Author Affiliation: Appl. Phys. Lab., Johns Hopkins Univ., Laurel, MD, USA
Journal: Proceedings of the SPIE - The International Society for Optical Engineering **Conference Title:** Proc. SPIE - Int. Soc. Opt. Eng. (USA) vol.4742 p. 583-93
Publisher: SPIE-Int. Soc. Opt. Eng ,
Publication Date: 2002 **Country of Publication:** USA
CODEN: PSISDG **ISSN:** 0277-786X
SICI: 0277-786X(2002)4742L.583:SSGT;1-H
Material Identity Number: C574-2002-318
U.S. Copyright Clearance Center Code: 0277-786X/02/$15.00
Conference Title: Detection and Remediation Technologies for Mines and Minelike Targets VII
Conference Sponsor: SPIE
Conference Date: 1-5 April 2002 **Conference Location:** Orlando, FL, USA
Language: English
Subfile: B

5/3/12
DIALOG(R)File 2: INSPEC

07024829 **INSPEC Abstract Number:** C9810-4240P-049
Title: A distributed graph algorithm for the detection of local cycles and knots
Author Boukerche, A.; Tropper, C.
Author Affiliation: Dept. of Comput. Sci., North Texas Univ., Denton, TX, USA
Journal: IEEE Transactions on Parallel and Distributed Systems vol.9, no.8 p. 748-57
Publisher: IEEE ,
Publication Date: Aug. 1998 **Country of Publication:** USA
CODEN: ITDSEO **ISSN:** 1045-9219
SICI: 1045-9219(199808)9:8L.748:DGAD;1-5
Material Identity Number: N785-98009
U.S. Copyright Clearance Center Code: 1045-9219/98/$10.00
Language: English
Subfile: C

5/3/13
DIALOG(R)File 2: INSPEC

06562979 **INSPEC Abstract Number:** B9706-6130-006, C9706-1250C-005
Title: A word graph algorithm for large vocabulary continuous speech recognition
Author Ortmanns, S.; Ney, H.; Aubert, X.
Author Affiliation: Lehrstuhl fur Inf., Tech. Hochschule Aachen, Germany
Journal: Computer Speech and Language vol.11, no.1 p. 43-72
Publisher: Academic Press ,
Publication Date: Jan. 1997 **Country of Publication:** UK
CODEN: CSPLEO **ISSN:** 0885-2308
SICI: 0885-2308(199701)11:1L.43:WGAL;1-R
Material Identity Number: J928-97001
U.S. Copyright Clearance Center Code: 0885-2308/97/010043+30$25.00
Language: English
Subfile: B C

5/3/14
DIALOG(R)File 2: INSPEC

04918500 **INSPEC Abstract Number:** C91044417
Title: AND/OR graph heuristic search algorithm NAO* based on norm S
Author Wang Shitong
Author Affiliation: Zhenjiang Shipbuilding Inst., China
Journal: Chinese Journal of Computers vol.14, no.1 p. 14-22

Publication Date: 1991 **Country of Publication:** China
CODEN: JIXUDT **ISSN:** 0254-4164
Language: Chinese
Subfile: C

? **ds**

Set	Items	Description
S1	159	GRAPH (W) TRAVERSAL
S2	1	S1 AND (ELIMINAT? OR END? OR DELET? OR CANCEL?) (W) GRAPH
S3	0	DIJKASTRA GRAPH
S4	0	DIJKASTRA (W) GRAPH
S5	283	GRAPH (W) ALGORITHM
S6	0	S2 AND S5
S7	0	GRAPH (W) EDGE? (W) NODE?
S8	283	GRAPH (W) EDGE?
S9	41	S8 AND (QUER? OR SEARCH? OR REQUEST?)
S10	6	S9 AND (RANK? OR RELEVANC? OR RAT?)
S11	0	S10 AND TRAVERS?

? **d s2/full/1**

Dialog eLink: USPTO Full Text Retrieval Options

2/9/1

DIALOG(R)File 2: INSPEC

09798148

Title: Identifying critical components during information security evaluations

Author Rae, A.; Fidge, C.

Author Affiliation: Irivensys Rail Syst. Australia, Brisbane Technol. Park, Qld., Australia

Journal: Journal of Research and Practice on Information Technology vol.37, no.4 p. 311-22

Publisher: Australian Comput. Soc ,

Publication Date: 2005 **Country of Publication:** Australia

CODEN: JRPTFH **ISSN:** 1443-458X

SICI: 1443-458X(2005)37:4L.311:ICCD;1-K

Material Identity Number: K606-2005-004

Language: English **Document Type:** Journal Paper (JP)

Treatment: Practical (P)

Abstract: Electronic communications devices intended for government or military applications must be rigorously evaluated to ensure that they maintain data confidentiality. High-grade information security evaluations require a detailed analysis of the device's design, to determine how it achieves necessary security functions. In practice, such evaluations are labour-intensive and costly, so there is a strong incentive to find ways to make the process more efficient. In this paper, we show how well-known concepts from graph theory can be applied to a device's design to optimise information security evaluations. In particular, we use end-to-end graph traversals to eliminate components that do not need to be evaluated at all, and minimal cutsets to identify the smallest group of components that needs to be evaluated in depth. (10 Refs)

Subfile: B C

Descriptors: data communication equipment; graph theory; security of data

Identifiers: critical component identification; information security evaluation; electronic communication devices; data confidentiality; graph theory; device design; end-to-end graph traversal

Class Codes: B6210 (Telecommunication applications); B0250 (Combinatorial mathematics) ; C5690 (Other data communication equipment and techniques); C6130S (Data security); C1160 (Combinatorial mathematics)

? **t s10/full/1-6**

10/9/1
DIALOG(R)File 2: INSPEC

09995552
Title: Parallel query processing and edge ranking of graphs
Author Dereniowski, D.; Kubale, M.
Author Affiliation: Dept. of Algorithms & Syst. Modeling, Gdansk Univ. of Technol., Poland
Conference Title: Parallel Processing and Applied Mathematics. 6th International Conference, PPAM 2005. Revised Selected Papers (Lecture Notes in Computer Science Vol.3911) p. 463-9
Editor(s): Wyrzykowski, R.; Dongarra, J.; Meyer, N.; Wasniewski, J.
Publisher: Springer-Verlag , Berlin, Germany
Publication Date: 2006 **Country of Publication:** Germany xxiii+1126 pp.
ISBN: 3 540 34141 2 **Material Identity Number:** XX-2006-00679
Conference Title: Parallel Processing and Applied Mathematics. 6th International Conference, PPAM 2005. Revised Selected Papers
Conference Date: 11-14 Sept. 2005 **Conference Location:** Poznan, Poland

Language: English **Document Type:** Conference Paper (PA)
Treatment: Theoretical (T); Experimental (X)
Abstract: In this paper we deal with the problem of finding an optimal query execution plan in database systems. We improve the analysis of a polynomial-time approximation algorithm due to Makino et al. for designing query execution plans with almost optimal number of parallel steps. This algorithm is based on the concept of edge ranking of graphs. We use a new upper bound for the edge ranking number of a tree to derive a better approximation ratio for this algorithm. We also present some experimental results obtained during the tests of the algorithm on random graphs in order to compare the quality of both approximation ratios on average. Both theoretical analysis and experimental results indicate the superiority of our approach. (13 Refs)
Subfile: C
Descriptors: parallel databases; query processing; tree data structures; trees (mathematics)
Identifiers: parallel query processing; graph edge ranking; optimal query execution plan ; database systems; polynomial-time approximation algorithm
Class Codes: C6160B (Distributed databases); C1160 (Combinatorial mathematics); C6150N (Distributed systems software); C6120 (File organisation)

10/9/2
DIALOG(R)File 2: INSPEC

08840031 **INSPEC Abstract Number:** C2004-02-6110B-087
Title: Software architecture recovery based on pattern matching
Author Sartipi, K.
Author Affiliation: Sch. of Comput. Sci., Waterloo Univ., Ont., Canada
Conference Title: Proceedings International Conference on Software Maintenance ICSM 2003 p. 293-6
Publisher: IEEE Comput. Soc , Los Alamitos, CA, USA
Publication Date: 2003 **Country of Publication:** USA xvi+468 pp.

ISBN: 0 7695 1905 9 **Material Identity Number:** XX-2003-03153
U.S. Copyright Clearance Center Code: 1063 6773/2003/$17.00
Conference Title: International Conference on Software Maintenance
Conference Sponsor: IEEE Comput. Soc. Tech. Council on Software Eng.(TCSE); Software Improvement Group; Raincode; Microsoft; City of Amsterdam
Conference Date: 22-26 Sept. 2003 **Conference Location:** Amsterdam, Netherlands

Language: English **Document Type:** Conference Paper (PA)
Treatment: Practical (P)
Abstract: This paper is a summary of the author's thesis that presents a model and an environment for recovering the high level design of legacy software systems based on user defined architectural patterns and graph matching techniques. In the proposed model, a high-level view of a software system in terms of the system components and their interactions is represented as a query, using a description language. A query is mapped onto a pattern-graph, where a component and its interactions with other components are represented as a group of graph-nodes and a group of graph-edges, respectively. Interaction constraints can be modeled by the description language as a part of the query. Such a pattern-graph is applied against an entity-relation graph that represents the information extracted from the source code of the software system. An approximate graph matching process performs a series of graph transformation operations (i.e., node/edge insertion/deletion) on the pattern-graph and uses a ranking mechanism based on data mining association to obtain a sub-optimal solution. The obtained solution corresponds to an extracted architecture that complies with the given query. (7 Refs)
Subfile: C
Descriptors: graph theory; pattern matching; reverse engineering; software architecture; systems re-engineering
Identifiers: software architecture recovery; pattern matching; legacy software systems; architectural patterns; graph matching; interaction constraints; description language; entity-relation graph; source code; graph transformation operations; ranking mechanism; data mining association
Class Codes: C6110B (Software engineering techniques); C1250 (Pattern recognition); C1160 (Combinatorial mathematics)

10/9/3
DIALOG(R)File 2: INSPEC

08614878 **INSPEC Abstract Number:** B2003-06-6250-045, C2003-06-1160-075
Title: Radiocolorings in periodic planar graphs: PSPACE-completeness and efficient approximations for the optimal range of frequencies
Author Fotakis, D.A.; Nikoletseas, S.E.; Papadopoulou, V.G.; Spirakis, P.G.
Author Affiliation: Max-Planck-Inst. fur Inf., Saarbrucken, Germany
Conference Title: Graph-Theoretic Concepts in Computer Science: 28th International Workshop, WG 2002. Revised Papers (Lecture Notes in Computer Science Vol.2573) p. 223-34
Editor(s): Kucera, L.
Publisher: Springer-Verlag , Berlin, Germany
Publication Date: 2002 **Country of Publication:** Germany xi+422 pp.
ISBN: 3 540 00331 2 **Material Identity Number:** XX-2003-00176
Conference Title: Graph-Theoretic Concepts in Computer Science. 28th International Workshop, WG 2002. Revised Papers
Conference Date: 13-15 June 2002 **Conference Location:** Cesky Krumlov, Czech Republic

Language: English **Document Type:** Conference Paper (PA)
Treatment: Practical (P); Theoretical (T)
Abstract: The frequency assignment problem (FAP) in radio networks is the problem of assigning frequencies to transmitters exploiting frequency reuse while keeping signal interference to acceptable levels. The FAP is usually modelled by variations of the graph coloring problem. The radiocoloring (RC) of a graph G(V,E) is an assignment function Phi :V to IN such that ; Phi (u)- Phi (v); >or=2, when u, v are neighbors in G, and ; Phi (u)- Phi (v); >or=1 when the distance of u, v in G is two. The range of frequencies used is called span. Here, we consider the optimization version of the radiocoloring problem (RCP) of finding a radiocoloring assignment of minimum span, called min span RCP. We deal with a variation of RCP: that of satisfying frequency assignment requests with some periodic behavior. In this case, the interference graph is an (infinite) periodic graph. Infinite periodic graphs model finite networks that accept periodic (in time, e.g. daily) requests for frequency assignment. Alternatively, they may model very large networks produced by the repetition of a small graph. A periodic graph G is defined by an infinite two-way sequence of repetitions of the same finite graph G/sub i/(V/sub i/,E/sub i/). The edge set of G is derived by connecting the vertices of each iteration G/sub i/ to some of the vertices of the next iteration G/sub i+1/, the same for all G/sub i/. The model of periodic graphs considered here is similar to that of periodic graphs in Orlin [1981], Marathe et al [1998]. We focus on planar periodic graphs, because in many cases real networks are planar and also because of their independent mathematical interest. We give two basic results: We prove that the min span RCP is PSPACE-complete for periodic planar graphs. We provide an O(n(Delta (G/sub i/)+ sigma)) time algorithm, (where ; V/sub i/; =n, Delta (G/sub i/) is the maximum degree of the graph G/sub i/ and sigma is the number of edges connecting each G/sub i/ to G/sub i+1/), which obtains a radiocoloring of a periodic planar graph G that approximates the minimum span within a ratio which tends to 2 as Delta (G/sub i/)+ sigma tends to infinity. (17 Refs)
Subfile: B C
Descriptors: algorithm theory; computational complexity; frequency allocation; graph colouring; interference (signal); radio networks
Identifiers: radiocoloring; RC; periodic planar graph; PSPACE-completeness; optimal frequency range; frequency assignment problem; FAP; radio network; frequency reuse; acceptable signal interference; graph coloring problem; assignment function; span; radiocoloring problem; RCP optimization version; min span RCP; RCP periodic behavior; interference graph; infinite periodic graph; finite network; periodic request; infinite two-way repetition sequence graph; graph edge set; vertices connection
Class Codes: B6250 (Radio links and equipment); B5230 (Electromagnetic compatibility and interference); B0250 (Combinatorial mathematics); C1160 (Combinatorial mathematics); C4240 (Programming and algorithm theory)

10/9/4
DIALOG(R)File 2: INSPEC

08350487 **INSPEC Abstract Number:** C2002-09-1160-069
Title: Approximation algorithms for the bottleneck stretch factor problem
Author Narasimhan, G.; Smid, M.
Author Affiliation: Sch. of Comput. Sci., Florida Int. Univ., Miami, FL, USA
Journal: Nordic Journal of Computing vol.9, no.1 p. 13-31
Publisher: Publishing Assoc. Nordic Journal of Comput ,
Publication Date: Spring 2002 **Country of Publication:** Finland

CODEN: NJCOFR **ISSN:** 1236-6064
SICI: 1236-6064(200221)9:1L.13:AABS;1-V
Material Identity Number: D077-2002-002

Language: English **Document Type:** Journal Paper (JP)
Treatment: Theoretical (T)
Abstract: The stretch factor of a Euclidean graph is the maximum ratio of the distance in the graph between any two points and their Euclidean distance. The following problem is considered. Pre-process a set S of n points in R/sup d/ into a data structure that supports the following queries: given an arbitrary query value b>0, compute a constant-factor approximation of the stretch factor of the graph G/sub b/, which is the graph on S containing all edges of length at most b. We give a data structure for this problem having size O(log n) and query time O(log log n). Even though there could be up to /sup n/C/sub 2/ different stretch factors in the collection {G/sub b/: b>0} of graphs, we show that this data structure can be constructed in subquadratic time. Our algorithms use techniques from computational geometry, such as minimum spanning trees, well-separated pairs, data structures for the nearest-neighbor problem, and algorithms for selecting and ranking distances. (18 Refs)
Subfile: C
Descriptors: approximation theory; computational complexity; computational geometry; data structures; graph theory; query processing; trees (mathematics)
Identifiers: approximation algorithms; bottleneck stretch factor problem; Euclidean graph; maximum distance ratio; Euclidean distance; point-set preprocessing; data structure; query value; constant-factor approximation; graph edge lengths; query time; subquadratic time complexity; computational geometry; minimum spanning trees; well-separated pairs; nearest-neighbor problem; distance selection algorithm; distance ranking algorithm; geometric spanners
Class Codes: C1160 (Combinatorial mathematics); C4240C (Computational complexity); C4260 (Computational geometry); C6120 (File organisation); C4250 (Database theory)

10/9/5
DIALOG(R)File 2: INSPEC

07275483 **INSPEC Abstract Number:** C1999-07-7250R-033
Title: Proximity search in databases
Author Goldman, R.; Shivakumar, N.; Venkatasubramanian, S.; Garcia-Molina, H.
Author Affiliation: Stanford Univ., CA, USA
Conference Title: Proceedings of the Twenty-Fourth International Conference on Very-Large Databases p. 26-37
Editor(s): Gupta,A.; Shmueli,O.; Widom,J.
Publisher: Morgan Kaufmann Publishers Inc , San Francisco, CA, USA
Publication Date: 1998 **Country of Publication:** USA xvii+708 pp.
ISBN: 1 55860 566 5 **Material Identity Number:** XX-1998-02232
Conference Title: Proceedings of 24th Annual International Conference on Very Large Data Bases (VLDB'98)
Conference Sponsor: Oracle; AT&T Lab.; IBM; Informix; Microsoft
Conference Date: 24-27 Aug. 1998 **Conference Location:** New York, NY, USA

Language: English **Document Type:** Conference Paper (PA)
Treatment: Practical (P)
Abstract: An information retrieval (IR) engine can rank documents based on the textual proximity of

keywords within each document. In this paper, we apply this notion to search across an entire database for objects that are "near" other relevant objects. Proximity searching enables simple "focusing" queries based on general relationships among objects, which is helpful for interactive query sessions. We view the database as a graph, with data in vertices (objects) and relationships indicated by edges. Proximity is defined based on shortest paths between objects. We have implemented a prototype search engine that uses this model to enable keyword searches over databases, and we have found it very effective for quickly finding relevant information. Computing the distance between objects in a graph stored on a disk can be very expensive. Hence, we show how to build compact indexes that allow us to quickly find the distance between objects at search time. Experiments show that our algorithms are efficient and scale well. (24 Refs)
Subfile: C
Descriptors: data structures; database indexing; graph theory; information retrieval; search engines; very large databases
Identifiers: proximity searching; databases; information retrieval engine; document ranking; keyword textual proximity; focusing queries; interactive query sessions; graph vertices; relationships; graph edges; shortest paths; prototype search engine; keyword searches; relevant information; compact indexes; efficient scalable algorithms
Class Codes: C7250R (Information retrieval techniques); C6120 (File organisation); C7250N (Search engines)

10/9/6
DIALOG(R)File 2: INSPEC

05974191 **INSPEC Abstract Number:** C9507-6160S-023
Title: Spatial knowledge representation and retrieval in 3-D image databases
Author Gudivada, V.N.; Jung, G.S.
Author Affiliation: Dept. of Comput. Sci., Ohio Univ., Athens, OH, USA
p. 90-7
Publisher: IEEE Comput. Soc. Press , Los Alamitos, CA, USA
Publication Date: 1995 **Country of Publication:** USA xv+347 pp.
ISBN: 0 8186 7105 X
U.S. Copyright Clearance Center Code: 0 8186 7105 X/95/$4.00
Conference Title: Proceedings of the International Conference on Multimedia Computing and Systems
Conference Sponsor: IEEE Comput. Soc. Tech. Committee on Multimedia Comput
Conference Date: 15-18 May 1995 **Conference Location:** Washington, DC, USA

Language: English **Document Type:** Conference Paper (PA)
Treatment: Theoretical (T)
Abstract: In multimedia retrieval applications such as architectural design, interior design, and real estate marketing, there exists a generic class of user queries that require retrieving images in the database that are spatially similar to the user query. We propose an image representation scheme (referred to as 3D spatial orientation graph or simply SOG) and an algorithm (referred to as SIM/sub 3D/) for retrieving 3D images of relevance (based on spatial similarity) to user queries from large image collections. Spatial similarity between a query and a database image is quantified based on the number as well as the extent to which the edges of SOG of the database image conform to the corresponding edges in the SOG of the query image. The time complexity of SIM/sub 3D/ is Theta (mod E/sub q/ mod + mod E/sub d/ mod) where mod E/sub q/ mod and mod E/sub d/ mod are the number of edges in the query and database images. SIM/sub 3D/ is robust in the sense that it can recognize translation and scale

variants of apt image and these properties are shown formally. The effectiveness of SIM/sub 3D/ is evaluated using a testbed image collection. The testbed comprises 60 images and are produced by generating 3 variants of each of the 15 original images. Image variants are produced by translation and scale transformations, and an arbitrary composition of these two transformations. The variants are designed to examine the robustness of the proposed algorithm. The results produced by the algorithm on a set of test queries are in agreement with the intuitively expected results. (11 Refs)

Subfile: C

Descriptors: computational complexity; graph theory; image representation; knowledge representation; multimedia computing; query processing; very large databases; visual databases

Identifiers: 3D image databases; spatial knowledge representation; spatial retrieval; multimedia retrieval applications; architectural design; interior design; real estate marketing; user queries; image retrieval; image representation scheme; algorithm; large image collections; spatial similarity; 3D spatial orientation graph; graph edges; time complexity; translation; scale variants; testbed image collection; image variants; scale transformations; robustness

Class Codes: C6160S (Spatial and pictorial databases); C6130M (Multimedia); C6170K (Knowledge engineering techniques); C5260B (Computer vision and image processing techniques); C4240C (Computational complexity); C1160 (Combinatorial mathematics)

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1. **A three-dimensional data model for representing topological relationships between spatial entities environments**
by *Lee, Jiyeong*, Ph.D., **The Ohio State University**, 2001, 175 pages; AAT 3022523
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by *Sheng, Lei*, Ph.D., **Case Western Reserve University**, 2000, 142 pages; AAT 9981865
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by *Wang, Xiong*, Ph.D., **New Jersey Institute of Technology**, 2000, 160 pages; AAT 9959676
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by *Ji, Xuerong*, Ph.D., **The University of North Carolina at Charlotte**, 2000, 138 pages; AAT 9982447
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5. **Similarity assessment for cardinal directions between extended spatial objects**
by *Goyal, Roop Kishor*, Ph.D., **The University of Maine**, 2000, 167 pages; AAT 9972143
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6. **Object recognition from large libraries of line patterns**
by *Huet, Benoit*, D.Phil., **The University of York (United Kingdom)**, 1999, 167 pages; AAT C822731
Abstract

7. **Modelling and retrieving multimedia data using spatial and temporal information**
by *Nabil, Mohammad*, Ph.D., **University of New South Wales (Australia)**, 1998; AAT 0599430
Abstract

8. **Bayesian reasoning for CSG-based object recognition**
by *Chang, Jyh-Chian*, Ph.D., **Northwestern University**, 1995, 188 pages; AAT 9537408
Abstract | Order a c

9. **Dataflow query processing and optimization**
by *Goel, Piyush*, Ph.D., **University of Michigan**, 1992, 191 pages; AAT 9226903
Abstract | Order a c

10. **A theory of reference graphs in relational databases**
by *Janssens, Hans*, Dr., **Universitaire Instelling Antwerpen (Belgium)**, 1991, 295 pages; AAT 9223516

10/790,642

Abstract Order a c

11. **Representation and manipulation of heterogeneous graph data objects**
by *Wang, George Ren-Zheng*, Ph.D., **University of California, Los Angeles**, 1990, 301 pages; AAT 9025

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1-11 of 11

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1. **On the existence of paths and cycles**
by *Hoffmann, Michael*, Ph.D., **Eidgenoessische Technische Hochschule Zuerich (Switzerland)**, 2005, 159 pages; AAT C820307

Abstract

1-1 of 1

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Database: Multiple databases... | Select multiple databases

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1 XSnippet: mining For sample code

Naiyana Sahavechaphan, Kajal Claypool

October 2006 **ACM SIGPLAN Notices , Proceedings of the 21st annual ACM SIGPLAN conference on Object-oriented programming systems, languages, and applications OOPSLA '06**, Volume 41 Issue 10

Publisher: ACM Press

Full text available: pdf(487.89 KB) Additional Information: full citation, abstract, references, index terms

It is common practice for software developers to use *examples* to guide development efforts. This largely unwritten, yet standard, practice of "develop by example" is often supported by examples bundled with library or framework packages, provided in textbooks, and made available for download on both official and unofficial web sites. However, the vast number of examples that are embedded in the billions of lines of already developed library and framework code are largely untapped. We have ...

Keywords: code assistants, code mining, code reuse, ranking code samples

2 Fast detection of communication patterns in distributed executions

Thomas Kunz, Michiel F. H. Seuren

November 1997 **Proceedings of the 1997 conference of the Centre for Advanced Studies on Collaborative research CASCON '97**

Publisher: IBM Press

Full text available: pdf(4.21 MB) Additional Information: full citation, abstract, references, index terms

Understanding distributed applications is a tedious and difficult task. Visualizations based on process-time diagrams are often used to obtain a better understanding of the execution of the application. The visualization tool we use is Poet, an event tracer developed at the University of Waterloo. However, these diagrams are often very complex and do not provide the user with the desired overview of the application. In our experience, such tools display repeated occurrences of non-trivial commun ...

3 Web graphs: Web projections: learning from contextual subgraphs of the web

Jure Leskovec, Susan Dumais, Eric Horvitz

May 2007 **Proceedings of the 16th international conference on World Wide Web WWW '07**

Publisher: ACM Press

10/790,642

Full text available: pdf(313.24 KB) Additional Information: full citation, abstract, references, index terms

Graphical relationships among Web pages have been exploited inmethods for ranking search results. To date, specific graphicalproperties have been used in these analyses. We introduce a WebProjection methodology that generalizes prior efforts of graphicalrelationships of the web in several ways. With the approach, wecreate subgraphs by projecting sets of pages and domains onto thelarger web graph, and then use machine learning to constructpredictive models that consider graphical properties as ...

Keywords: contextual subgraph, query reformulation, web graph, web projection, web search

4 SALSA: the stochastic approach for link-structure analysis

R. Lempel, S. Moran

April 2001 **ACM Transactions on Information Systems (TOIS)**, Volume 19 Issue 2

Publisher: ACM Press

Full text available: pdf(180.81 KB) Additional Information: full citation, abstract, references, citings, index terms

Today, when searching for information on the WWW, one usually performs a query through a term-based search engine. These engines return, as the query's result, a list of Web pages whose contents matches the query. For broad-topic queries, such searches often result in a huge set of retrieved documents, many of which are irrelevant to the user. However, much information is contained in the link-structure of the WWW. Information such as which pages are linked to others can be used to augment searc ...

Keywords: Link-structure analysis, SALSA, TKC effect, hubs and authorities, random walks

5 Web ranking and classification: Ranking target objects of navigational queries

Louiqa Raschid, Yao Wu, Woei-Jyh Lee, María Esther Vidal, Panayiotis Tsaparas, Padmini Srinivasan, Aditya Kumar Sehgal

November 2006 **Proceedings of the eighth ACM international workshop on Web information and data management WIDM '06**

Publisher: ACM Press

Full text available: pdf(405.64 KB) Additional Information: full citation, abstract, references, index terms

Web navigation plays an important role in exploring public interconnected data sources such as life science data. A navigational query in the life science graph produces a result graph which is a layered directed acyclic graph (DAG). Traversing the result paths in this graph reaches a target object set (TOS). The challenge for ranking the target objects is to provide recommendations that re ect the relative importance of the retrieved object, as well as its relevance to the specific query posed ...

Keywords: link analysis, navigational query, pagerank, ranking

6 Query processing of semi-structured data: BLINKS: ranked keyword searches on graphs

Hao He, Haixun Wang, Jun Yang, Philip S. Yu

June 2007 **Proceedings of the 2007 ACM SIGMOD international conference on Management of data SIGMOD '07**

Publisher: ACM Press

Full text available: pdf(366.64 KB) Additional Information: full citation, abstract, references, index terms

Query processing over graph-structured data is enjoying a growing number of applications. A top-*k* keyword search query on a graph finds the top *k* answers according to some ranking criteria, where each answer is a substructure of the graph containing all query keywords. Current techniques for supporting such queries on general graphs suffer from several drawbacks, e.g., poor worst-case performance, not taking full advantage of indexes, and high memory requirements. To address the ...

Keywords: graphs, indexing, keyword search, ranking

7 Association mining

Aaron Ceglar, John F. Roddick
July 2006 **ACM Computing Surveys (CSUR)**, Volume 38 Issue 2
Publisher: ACM Press
Full text available: pdf(770.54 KB) Additional Information: full citation, abstract, references, index terms

The task of finding correlations between items in a dataset, association mining, has received considerable attention over the last decade. This article presents a survey of association mining fundamentals, detailing the evolution of association mining algorithms from the seminal to the state-of-the-art. This survey focuses on the fundamental principles of association mining, that is, itemset identification, rule generation, and their generic optimizations.

Keywords: Data mining, association mining

8 Ranking: Boolean + ranking: querying a database by k-constrained optimization

Zhen Zhang, Seung-won Hwang, Kevin Chen-Chuan Chang, Min Wang, Christian A. Lang, Yuan-chi Chang
June 2006 **Proceedings of the 2006 ACM SIGMOD international conference on Management of data SIGMOD '06**
Publisher: ACM Press
Full text available: pdf(316.14 KB) Additional Information: full citation, abstract, references, index terms

The wide spread of databases for managing structured data, compounded with the expanded reach of the Internet, has brought forward interesting *data retrieval* and *analysis* scenarios to RDBMS. In such settings, queries often take the form of *k-constrained optimization*, with a Boolean constraint and a numeric optimization expression as the goal function, retrieving only the top-*k* tuples. This paper proposes the concept of supporting such queries, as their nature i ...

Keywords: A* search, constrained optimization, index, query processing, top-k query

9 Special issue on knowledge representation

Ronald J. Brachman, Brian C. Smith
February 1980 **ACM SIGART Bulletin**, Issue 70
Publisher: ACM Press
Full text available: pdf(13.13 MB) Additional Information: full citation, abstract, citings

In the fall of 1978 we decided to produce a special issue of the SIGART Newsletter devoted to a survey of current knowledge representation research. We felt that there were twe useful functions such an issue could serve. First, we hoped to elicit a clear picture of how people working in this subdiscipline understand knowledge representation research, to illuminate the issues on which current research is focused, and to catalogue what approaches and techniques are currently being developed. Secon ...

10 Index-driven similarity search in metric spaces (Survey Article)

Gisli R. Hjaltason, Hanan Samet
December 2003 **ACM Transactions on Database Systems (TODS)**, Volume 28 Issue 4
Publisher: ACM Press

Full text available: pdf(650.64 KB) Additional Information: full citation, abstract, references, citings, index terms

Similarity search is a very important operation in multimedia databases and other database applications involving complex objects, and involves finding objects in a data set *S* similar to a query object *q*, based on some similarity measure. In this article, we focus on methods for similarity search that make the general assumption that similarity is represented with a distance metric *d*. Existing methods for handling similarity search in this setting typically fall into one of ...

Keywords: Hiearchical metric data structures, distance-based indexing, nearest neighbor queries, range queries, ranking, similarity searching

11 Modeling and querying moving objects in networks

Hartmut Güting, Teixeira de Almeida, Zhiming Ding
June 2006 **The VLDB Journal — The International Journal on Very Large Data Bases**, Volume 15 Issue 2
Publisher: Springer-Verlag New York, Inc.

Full text available: pdf(610.40 KB) Additional Information: full citation, abstract, references

Moving objects databases have become an important research issue in recent years. For modeling and querying moving objects, there exists a comprehensive framework of abstract data types to describe objects moving freely in the 2D plane, providing data types such as *moving point* or *moving region.* However, in many applications people or vehicles move along transportation networks. It makes a lot of sense to model the network explicitly and to describe movements relative to the networ ...

Keywords: ADT, Data type, Moving object, Network, Spatio-temporal

12 Collision detection and proximity queries

Sunil Hadap, Dave Eberle, Pascal Volino, Ming C. Lin, Stephane Redon, Christer Ericson
August 2004 **ACM SIGGRAPH 2004 Course Notes SIGGRAPH '04**
Publisher: ACM Press

Full text available: pdf(11.22 MB) Additional Information: full citation, abstract

This course will primarily cover widely accepted and proved methodologies in collision detection. In addition more advanced or recent topics such as continuous collision detection, ADFs, and using graphics hardware will be introduced. When appropriate the methods discussed will be tied to familiar applications such as rigid body and cloth simulation, and will be compared. The course is a good overview for those developing applications in physically based modeling, VR, haptics, and robotics.

13 On the performance of object clustering techniques

Manolis M. Tsangaris, Jeffrey F. Naughton
June 1992 **ACM SIGMOD Record , Proceedings of the 1992 ACM SIGMOD international conference on Management of data SIGMOD '92**, Volume 21 Issue 2
Publisher: ACM Press

Full text available: pdf(1.20 MB) Additional Information: full citation, abstract, references, citings, index terms

We investigate the performance of some of the best-known object clustering algorithms

on four different workloads based upon the tektronix benchmark. For all four workloads, stochastic clustering gave the best performance for a variety of performance metrics. Since stochastic clustering is computationally expensive, it is interesting that for every workload there was at least one cheaper clustering algorithm that matched or almost matched stochastic clustering. Unfortunately, for each workl ...

14 Paper session 5: approximate and ranked query processing: Challenges in selecting paths for navigational queries: trade-off of benefit of path versus cost of plan

María-Esther Vidal, Louiqa Raschid, Julian Mestre

June 2004 **Proceedings of the 7th International Workshop on the Web and Databases: colocated with ACM SIGMOD/PODS 2004 WebDB '04**

Publisher: ACM Press

Full text available: pdf(167.25 KB) Additional Information: full citation, abstract, references

Life sciences sources are characterized by a complex graph of overlapping sources, and multiple alternate links between sources. A (navigational) query may be answered by traversing multiple alternate paths between a start source and a target source. Each of these paths may have dissimilar benefit, e.g., the cardinality of result objects that are reached in the target source. Paths may also have dissimilar costs of evaluation, i.e., the execution cost of a query evaluation plan for a path. In pr ...

15 Computing graphical queries over XML data

Sara Comai, Ernesto Damiani, Piero Fraternali

October 2001 **ACM Transactions on Information Systems (TOIS)**, Volume 19 Issue 4

Publisher: ACM Press

Full text available: pdf(707.80 KB) Additional Information: full citation, abstract, references, citings, index terms

The rapid evolution of XML from a mere data exchange format to a universal syntax for encoding domain-specific information raises the need for new query languages specifically conceived to address the characteristics of XML. Such languages should be able not only to extract information from XML documents, but also to apply powerful transformation and restructuring operators, based on a well-defined semantics. Moreover, XML queries should be natural to write and understand, as nontechnical person ...

Keywords: Document restructuring, graphical query languages, semantics

16 Relevancy-based access control and its evaluation on versioned XML documents

Mizuho Iwaihara, Ryotaro Hayashi, Somchai Chatvichienchai, Chutiporn Anutariya, Vilas Wuwongse

February 2007 **ACM Transactions on Information and System Security (TISSEC)**, Volume 10 Issue 1

Publisher: ACM Press

Full text available: pdf(1.00 MB) Additional Information: full citation, abstract, references, index terms

Integration of version and access control of XML documents has the benefit of regulating access to rapidly growing archives of XML documents. Versioned XML documents provide us with valuable information on dependencies between document nodes, but, at the same time, presenting the risk of undesirable data disclosure. In this article, we introduce the notion of relevancy-based access control, which realizes protection of versioned XML documents by various types of relevancy, such as version dep ...

Keywords: Access control, XML, XPath, query language, security, version control

17 Nearest and reverse nearest neighbor queries for moving objects

Rimantas Benetis, S. Jensen, Gytis Karĉiauskas, Simonas Ŝaltenis
September 2006 **The VLDB Journal — The International Journal on Very Large Data Bases**, Volume 15 Issue 3
Publisher: Springer-Verlag New York, Inc.
Full text available: pdf(790.23 KB) Additional Information: full citation, abstract, citings

With the continued proliferation of wireless communications and advances in positioning technologies, algorithms for efficiently answering queries about large populations of moving objects are gaining interest. This paper proposes algorithms for *k* nearest and reverse *k* nearest neighbor queries on the current and anticipated future positions of points moving continuously in the plane. The former type of query returns *k* objects nearest to a query object for each time point dur ...

Keywords: Continuous queries, Incremental update, Location-based services, Mobile objects, Neighbor queries, Persistent queries

18 Performances of clustering policies in object bases

Adel Shrufi
November 1994 **Proceedings of the third international conference on Information and knowledge management CIKM '94**
Publisher: ACM Press
Full text available: pdf(967.44 KB) Additional Information: full citation, abstract, references, index terms

In this paper, we address the problem of clustering graphs in object-oriented databases. Unlike previous studies which focused only on a workload consisting of a single operation, this study tackles the problem when the workload is a set of operations (method and queries) that occur with a certain probability. Thus, the goal is to minimize the expected cost of an operation in the workload, while maintaining a similarly low cost for each individual operation class.To this end, we ...

Keywords: graph partitioning, object-oriented database systems, performance analysis, storage techniques

19 What makes the differences: benchmarking XML database implementations

Hongjun Lu, Jeffrey Xu Yu, Guoren Wang, Shihui Zheng, Haifeng Jiang, Ge Yu, Aoying Zhou
February 2005 **ACM Transactions on Internet Technology (TOIT)**, Volume 5 Issue 1
Publisher: ACM Press
Full text available: pdf(589.14 KB) Additional Information: full citation, abstract, references, index terms

XML is emerging as a major standard for representing data on the World Wide Web. Recently, many XML storage models have been proposed to manage XML data. In order to assess an XML database's abilities to deal with XML queries, several benchmarks have also been proposed, including XMark and XMach. However, no reported studies using those benchmarks were found that can provide users with insights on the impacts of a variety of storage models on XML query performance. In this article, we report our ...

Keywords: XML query processing, XML storage model, benchmark

20 Shape-based retrieval and analysis of 3D models

Thomas Funkhouser, Michael Kazhdan
August 2004 **ACM SIGGRAPH 2004 Course Notes SIGGRAPH '04**
Publisher: ACM Press
Full text available: pdf(12.56 MB) Additional Information: full citation, abstract

Large repositories of 3D data are rapidly becoming available in several fields, including mechanical CAD, molecular biology, and computer graphics. As the number of 3D models grows, there is an increasing need for computer algorithms to help people find the interesting ones and discover relationships between them. Unfortunately, traditional text-based search techniques are not always effective for 3D models, especially when queries are geometric in nature (e.g., find me objects that fit into thi ...

Results 1 - 20 of 200 Result page: **1** 2 3 4 5 6 7 8 9 10 next

? **ds**

```
Set     Items   Description
S1         46   GRAPH (W) TRAVERSAL
S2         15   S1 AND (EDGE? OR NODE? OR OBJECT OR OBJECTS)
S3          7   S2 AND (SEARCH? OR REQUEST? OR INQUIR? OR ENQUIR? OR QUEST-
              ION? OR QUER?)
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? **t s3/full/1-7**

3/9/1

0000544483 IP Accession No: 200609-94-117828

Extensions to query languages for graph traversal problems

Mannino, M V

IEEE Transactions on Knowledge and Data Engineering , v 2 , n 3 , p 353-363 , Sept. 1990
Publication Date: 1990
Publisher: Institute of Electrical and Electronics Engineers, Inc. , 445 Hoes Ln , Piscataway , NJ , 08854-1331
Country Of Publication: USA
Publisher Url: http://ieee.org
Publisher Email: inspec@ieee.org

Document Type: Journal Article
Record Type: Abstract
Language: English
ISSN: 1041-4347
Electronic Issn: NO
DOI: 10.1109/69.60798
File Segment: Computer & Information Systems Abstracts

Abstract:
Extensions to database query languages for retrievals that involve inferencing on the nodes and edges of a graph are surveyed. Common types of inferencing are to find paths between two nodes, compute a value for a path such as a distance or an elapsed time, and to choose among alternative paths. The survey is based on the data model (relational or functional), method of extension (iteration, recursion, or special operators), interface style (string or tabular), and restrictions (data- and problem-oriented). The Quel, objected-oriented functional data, G-Whin, and Alpha languages are examined in detail with different values for these properties. The characteristics of other languages are summarized in several tables. The results of the survey indicate the diversity of language extensions and the need to provide data-model and query-language features to address such problems

Descriptors: Graphs; Query processing; Databases; Strings; Constrictions; Retrieval; Tables; Mathematical models; Operators; Iterative methods; Recursion
Subj Catg: 94, Management of Computing and Information Systems

Dialog eLink: USPTO Full Text Retrieval Options
3/9/2
DIALOG(R)File 56: Computer and Information Systems Abstracts

0000513862 IP Accession No: 200609-22-043519
PCBN: a high-performance partitionable circular bus network for distributed systems

Woo, Tai-Kuo; Su, S Y W
IEEE Transactions on Parallel and Distributed Systems , v 4 , n 12 , p 1298-1307 , Dec. 1993
Publication Date: 1993
Publisher: Institute of Electrical and Electronics Engineers, Inc. , 445 Hoes Ln , Piscataway , NJ , 08854-1331
Country Of Publication: USA
Publisher Url: http://ieee.org
Publisher Email: inspec@ieee.org

Document Type: Journal Article
Record Type: Abstract
Language: English
ISSN: 1045-9219
Electronic Issn: NO
DOI: 10.1109/71.250112
File Segment: Computer & Information Systems Abstracts

Abstract:
The authors present a dynamically partitionable circular bus network (PCBN) and efficient algorithms for maximizing its utilization. In their approach, a distributed network is transformed into a graph, in which a vertex represents a communication request and an edge denotes the conflict between a pair of communication requests. A graph traversal algorithm is applied to the graph to identify some maximal independent sets of vertices. The communication requests corresponding to the vertices of a maximum independent set call proceed in parallel. By computing the expected size of the maximal independent sets of a graph, the improvement ratio of the network can be obtained. The network control and synchronization techniques of PCBN are described in detail. The idling problem in the execution of nonconflicting requests is also discussed

Descriptors: Graphs; Networks; Computer networks; Algorithms; Buses (vehicles); Synchronization; Utilization; Network control; Synchronism; Computation
Subj Catg: 22, Processor Architectures and Process Management

Dialog eLink: USPTO Full Text Retrieval Options
3/9/3
DIALOG(R)File 56: Computer and Information Systems Abstracts

0000309572 IP Accession No: 391983
Competitive algorithms for layered graph traversal

Fiat, Amos; Foster, Dean P; Karloff, Howard; Rabani, Yuval; Ravid, Yiftach; Vishwanathan, Sundar
Tel-Aviv Univ, Tel-Aviv, Isr
SIAM J COMPUT , v 28 , n 2 , p 447-462 , July-Aug. 1998
Publication Date: 1998
Publisher: SOCIETY FOR INDUSTRIAL AND APPLIED MATHEMATICS , 3600 University City Science Center , Philadelphia , PA , 19104-2688
Country Of Publication: USA
Publisher Url: http://epubs.siam.org
Publisher Email: siam@siam.org

Document Type: Journal Article
Record Type: Abstract
Language: English
ISSN: 0097-5397
File Segment: Computer & Information Systems Abstracts

Abstract:
A layered graph is a connected graph whose vertices are partitioned into sets L sub(0) identical with {s}, L sub(1), L sub(2), ..., and whose edges, which have nonnegative integral weights, run between consecutive layers. Its width is max{|L sub(i)|}. In the on-line layered graph traversal problem, a searcher starts at s in a layered graph of unknown width and tries to reach a target vertex t; however, the vertices in layer i and the edges between layers i-1 and i are only revealed when the searcher reaches layer i-1. We give upper and lower bounds on the competitive ratio of layered graph traversal algorithms. We give a deterministic on-line algorithm which is O(9 super(w))-competitive on width-w graphs and prove that for no w can a deterministic on-line algorithm have a competitive ratio better than 2 super(w-2) on width-w graphs. We prove that for all w, w/2 is a lower bound on the competitive ratio of any randomized on-line layered graph traversal algorithm. For traversing layered graphs consisting of w disjoint paths tied together at a common source, we give a randomized on-line algorithm with a competitive ratio of O(log w) and prove that this is optimal up to a constant factor.

Descriptors: Computational complexity; Algorithms; Theorem proving; Random processes
Identifiers: Layered graph traversal algorithms; Competitive analysis
Subj Catg: C 921.4, Combinatorial Mathematics (Includes Graph Theory, Set Theory); C 721.1, Computer Theory (Includes Formal Logic, Automata Theory, Switching Theory, Programming Theory); C 922.1, Probability Theory

3/9/4

0000258143 IP Accession No: 0129773
Trading space for time in undirected s-t connectivity

Broder, Andrei Z; Karlin, Anna R; Raghavan, Prabhakar; Upfal, Eli DEC Systems Research Center, Palo Alto, CA, USA
SIAM J COMPUT , v 23 , n 2 , p 324-334 , 1994
Publication Date: 1994
Publisher: SOCIETY FOR INDUSTRIAL AND APPLIED MATHEMATICS , 3600 University City

Science Center , Philadelphia , PA , 19104-2688
Country Of Publication: USA
Publisher Url: http://epubs.siam.org
Publisher Email: siam@siam.org

Document Type: Journal Article
Record Type: Abstract
Language: English
ISSN: 0097-5397
File Segment: Computer & Information Systems Abstracts

Abstract:
Aleliunas at al. (20th Annual Symposium on Foundations of Computer Science, IEEE Computer Society Press, Los Alamitos, CA, 1979, pp. 218-223) posed the following question: 'The reachability problem for undirected graphs can be solved in log space and O(mn) time m is the number of edges and n is the number of vertices by a probabilistic algorithm that simulates a random walk, or in linear time and space by a conventional deterministic graph traversal algorithm. Is there a spectrum of time-space trade-offs between these extremes?' This question is answered in the affirmative for space graphs by presentation of an algorithm that is faster than the random walk by a factor essentially proportional to the size of its workspace. For denser graphs, this algorithm is faster than the random walk but the speed-up factor is smaller.

Descriptors: Computational complexity; Combinatorial mathematics
Identifiers: Space time trade off; Connectivity testing; Parallel random walks
Subj Catg: C 723.1, Computer Programming; C 921.4, Combinatorial Mathematics (Includes Graph Theory, Set Theory)

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DIALOG(R)File 56: Computer and Information Systems Abstracts

0000242501 IP Accession No: 0070159
Transitive closure algorithms based on graph traversal.

Ioannidis, Yannis; Ramakrishnan, Raghu; Winger, Linda Univ of Wisconsin, WI, USA
ACM Transactions on Database Systems , v 18 , n 3 , p 512-576 , 1993
Publication Date: 1993
Publisher: Association for Computing Machinery, Inc. , One Astor Plaza, 1515 Broadway , New York , NY , 10036-5701
Country Of Publication: USA
Publisher Url: http://www.acm.org/
Publisher Email: SIGS@acm.org

Document Type: Journal Article
Record Type: Abstract
Language: English
ISSN: 0362-5915
File Segment: Computer & Information Systems Abstracts

Abstract:
Several graph-based algorithms have been proposed in the literature to compute the transitive closure of a directed graph. We develop two new algorithms (Basic TC and Global DFTC) and compare the performance of their implementations in a disk-based environment with a well-known graph-based algorithm proposed by Schmitz. Our algorithms use depth-first search to traverse a graph and a technique called marking to avoid processing some of the arcs in the graph. They compute the closure by processing nodes in reverse topological order, building descendent sets by adding the descendent sets of children. While the details of these algorithms differ considerably, one important difference among them is the time at which descendent set additions are performed. Basic TC performs a separate depth-first traversal to obtain the topological order of nodes and does additions in a second pass. Global DFTC performs additions whenever two sets that must be added are in memory, thereby eliminating the need to bring these sets in again later. The Schmitz algorithm is intermediate in this respect, deferring the addition of the descendent set of a child to that of a parent until the root of the strong component containing the parent is identified. Contrary to our expectations, deferring additions as much as possible, as in Basic TC, results in superior performance. The first reason is that early additions result in larger descendent set sizes on the average over the duration of the execution, thereby causing more I/O; very often this turns out to more than offset the gains of not having to fetch certain sets again to add them. The second reason is that information collected in the first pass can be used to apply several optimizations in the second pass. To the extent possible, we also adapt these algorithms to perform path computations. Again, our performance comparison confirms the trends seen in reachability queries. Taken in conjunction with another performance study our results indicate that all graph-based algorithms significantly outperform other types of algorithms such as Seminaive and Warren.

Descriptors: Graph theory; Computational methods; Computer programming languages; Trees (mathematics); Data structures; Algorithms; Recursive functions; Critical path analysis; Query languages; Root loci
Identifiers: Transitive closure algorithms; Graph traversal; Schmitz algorithms
Subj Catg: C 723.3, Database Systems; C 921.4, Combinatorial Mathematics (Includes Graph Theory, Set Theory); C 723.1.1, Computer Programming Languages; C 723.2, Data Processing; C 723.1, Computer Programming; C 731.4, System Stability

0000217300 IP Accession No: 0041783
Performance modeling of a partitionable circular bus network for distributed systems.

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Addl. Source Info: PROC 92 ACM SIGAPP SYMP APPL COMPUT SAC 92., ACM, NEW YORK, NY (USA), 1992, pp. 758-766,
Publication Date: 1992
Publisher: ACM, NEW YORK, NY (USA)

Conference:
the 1992 ACM/SIGAPP Symposium on Applied Computing SAC '92, Kansas City, KS, USA, 03/01-03/92

Record Type: Abstract

Language: English
ISBN: 0-89791-502-x
File Segment: Computer & Information Systems Abstracts

Abstract:
In a distributed computing environment, a high performance communication network is essential. In this paper, we present a dynamically partitionable circular bus network (PCBN) and an efficient algorithm for maximizing its utilization. In our approach, a distributed network is transformed into a graph, in which a vertex represents a communication request and an edge denotes the conflict between a pair of communication requests. A graph traversal algorithm is then applied to the graph to identify some maximal independent sets of vertices. The communication requests corresponding to the vertices of a maximal independent set can proceed in parallel. By computing the expected size of the maximal independent sets of a graph, we can obtain the improvement ratio of the network. The analytical performance evaluation shows a significant decrease in network delay.

Descriptors: Parallel processing systems; Computer systems; Computer networks; Performance; Algorithms; Graph theory; Combinatorial mathematics; Optimization; Computer hardware
Identifiers: Communication network; Partitionable circular bus network; Graph traversal algorithm
Subj Catg: C 722.4, Digital Computers and Systems; C 721.1, Computer Theory (Includes Formal Logic, Automata Theory, Switching Theory, Programming Theory); C 921.4, Combinatorial Mathematics (Includes Graph Theory, Set Theory); C 921.5, Optimization Techniques

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DIALOG(R)File 56: Computer and Information Systems Abstracts

0000194227 IP Accession No: 2449147
Extensions to query languages for graph traversal problems.

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IEEE Transactions on Knowledge and Data Engineering , v 2 , n 3 , p 353-363 , 1990
Publication Date: 1990
Publisher: Institute of Electrical and Electronics Engineers, Inc. , 445 Hoes Ln , Piscataway , NJ , 08854-1331
Country Of Publication: USA
Publisher Url: http://ieee.org
Publisher Email: inspec@ieee.org

Document Type: Journal Article
Record Type: Abstract
Language: English
ISSN: 1041-4347
File Segment: Computer & Information Systems Abstracts

Abstract:
We survey extensions to database query languages for retrievals that involve inferencing on the nodes and edges of a graph. Common types of inferencing are to find paths between two nodes, compute a value for a path such as a distance or an elapsed time, and to choose among alternative paths. Our

survey is based on the data model (relational or functional), method of extension (iteration, recursion, or special operators), interface style (string or tabular), and restrictions (data and problem oriented). The results of our survey indicate the diversity of language extensions and the need to provide data model and query language features to reason about such problems.

Descriptors: Data bases; Query languages
Identifiers: artificial intelligence; knowledge engineering; graph traversal
Subj Catg: C CS1.3.7, SPECIAL CLASSES OF LANGUAGES